

## WHAT IS CLAIMED IS:

1. A computer-readable medium having thereon computer-executable instructions for performing a method comprising:
  - establishing at least one connection to at least one computer network;
  - issuing an issued network identifier for at least one computer network of said at least one computer network; and
  - determining an identity confidence for each issued network identifier with respect to at least one current computer network.
2. The computer-readable medium of claim 1, wherein the method further comprises responding to a request for an identity of said at least one current computer network with a response, the response comprising:
  - at least one issued network identifier; and
  - for each issued network identifier in the response, the identity confidence for the issued network identifier determined with respect to said at least one current computer network.
3. The computer-readable medium of claim 2, wherein:
  - each identity confidence has a value, the value ranging from a minimum identity confidence value to a maximum identity confidence value; and
  - the value of each identity confidence in the response is the maximum identity confidence value.
4. The computer-readable medium of claim 2, wherein:
  - each identity confidence has a value; and

the value of each identity confidence in the response is above a minimum identity confidence response threshold.

5. The computer-readable medium of claim 1, wherein each issued network identifier comprises a globally unique identifier (GUID).

6. The computer-readable medium of claim 1, wherein:  
each computer network has at least one network attribute;  
each network attribute is associated with at least one identity confidence modifier;  
each network attribute has a value; and  
determining the identity confidence for each issued network identifier with respect to said at least one current computer network comprises, for each current computer network and each network attribute, applying at least one of said at least one identity confidence modifier associated with the network attribute to the identity confidence of each issued network identifier if the value of the network attribute of the computer network identified by the issued network identifier matches the value of the network attribute of the current computer network.

7. The computer-readable medium of claim 6, wherein:  
each identity confidence modifier specifies an identity confidence transformation; and  
applying the identity confidence modifier to the identity confidence comprises transforming the identity confidence in accordance with the identity confidence transformation specified by the identity confidence modifier.

8. The computer-readable medium of claim 7, wherein each identity confidence modifier specifies a linear identity confidence transformation.

9. The computer-readable medium of claim 1, wherein:

- each computer network has a plurality of network attributes, the plurality of network attributes comprising:
  - at least one passive network attribute; and
  - at least one active network attribute;
- each passive network attribute is associated with at least one passive network attribute identity confidence modifier;
- each active network attribute is associated with at least one active network attribute identity confidence modifier;
- each network attribute has a value;
- retrieving the value of each active network attribute comprises generating network traffic on the computer network that has the active network attribute; and
- determining the identity confidence for each issued network identifier with respect to said at least one current computer network comprises:
  - for each current computer network and each passive network attribute, applying at least one of said at least one passive network attribute identity confidence modifier associated with the passive network attribute to the identity confidence of each issued network identifier if the value of the passive network attribute of the computer network identified by the issued network identifier matches the value of the passive network attribute of the current computer network; and
  - for each current computer network and each active network attribute, applying at least one of said at least one

active network attribute identity confidence modifier associated with the active network attribute to the identity confidence of each issued network identifier if the value of the active network attribute of the computer network identified by the issued network identifier matches the value of the active network attribute of the current computer network.

10. The computer-readable medium of claim 1, wherein:

- each computer network has at least one passive network attribute;
- each passive network attribute is associated with at least one passive network attribute identity confidence modifier;
- each issued network identifier is associated with a learned identity confidence modifier;
- each network attribute has a value;
- retrieving the value of each passive network attribute is independent of generating network traffic on the computer network that has the passive network attribute; and
- determining the identity confidence for each issued network identifier with respect to said at least one current computer network comprises:

- for each current computer network and each passive network attribute, applying at least one of said at least one passive network attribute identity confidence modifier associated with the passive network attribute to the identity confidence of each issued network identifier if the value of the passive network attribute of the computer network identified by the issued network identifier matches the value of the passive network attribute of the current computer network; and

for each current computer network, applying, to the identity confidence of each issued network identifier, the learned identity confidence modifier associated with the issued network identifier if the identity confidence of the issued network identifier is above a minimum learned modification identity confidence threshold.

11. The computer-readable medium of claim 10, wherein:  
a first set of identity confidences comprises the identity confidences determined for each issued network identifier with respect to said at least one current computer network;

each computer network has a plurality of network attributes, the plurality of network attributes comprising:

at least one passive network attribute; and

at least one active network attribute;

each active network attribute is associated with at least one active network attribute identity confidence modifier;

retrieving the value of each active network attribute comprises generating network traffic on the computer network that has the active network attribute; and

the method further comprises:

determining, as a result of at least one active network attribute becoming available, a second set of identity confidences such that determining the second set of identity confidences comprises:

applying at least one active network attribute identity confidence modifier to the second set of identity confidences; and

adjusting the learned identity confidence modifier associated with each issued network identifier so that if the first set of identity confidences were to be re-determined then

differences between a re-determined first set of identity confidences and the second set of identity confidences would be minimized.

12. A computer-readable medium having thereon computer-executable instructions for performing a method comprising:  
determining a first set of identity confidences such that determining the first set of identity confidences comprises applying at least one of a set of learned identity confidence modifiers to at least one of the first set of identity confidences;

determining a second set of identity confidences such that determining the second set of identity confidences comprises applying at least one of a set of active network attribute identity confidence modifiers to at least one of the second set of identity confidences; and

adjusting the set of learned identity confidence modifiers so that if the first set of identity confidences were to be re-determined then differences between a re-determined first set of identity confidences and the second set of identity confidences would be minimized.

13. The computer-readable medium of claim 12, wherein:  
each learned identity confidence modifier in the set of learned identity confidence modifiers is associated with one of a set of issued network identifiers;

each identity confidence in the first set of identity confidences is associated with one of the set of issued network identifiers; and

applying at least one of the set of learned identity confidence modifiers to the first set of identity confidences

comprises, for each issued network identifier in the set of issued network identifiers, applying the learned identity confidence modifier associated with the issued network identifier to the identity confidence associated with the issued network identifier if the identity confidence associated with the issued network identifier is above a minimum learned modification identity confidence threshold.

14. The computer-readable medium of claim 12, wherein:  
each identity confidence in the second set of identity confidences is associated with one of a set of issued network identifiers;

each issued network identifier in the set of issued network identifiers is associated with at least one of a set of issued active network attributes;

each active network attribute identity confidence modifier in the set of active network attribute identity confidence modifiers is associated with at least one of a set of current active network attributes;

each active network attribute has a value; and  
applying at least one of the set of active network attribute identity confidence modifiers to the second set of identity confidences comprises, for each issued network identifier in the set of issued network identifiers and each active network attribute in the set of current active network attributes, applying the active network attribute identity confidence modifier associated with the active network attribute to the identity confidence associated with the issued network identifier if the value of the active network attribute in the set of current active network attributes matches the value of the active network attribute in the set of issued

active network attributes associated with the issued network identifier.

15. The computer-readable medium of claim 12, wherein:  
each identity confidence modifier specifies an identity confidence transformation; and  
applying the identity confidence modifier to the identity confidence comprises transforming the identity confidence in accordance with the identity confidence transformation specified by the identity confidence modifier.

16. The computer-readable medium of claim 15, wherein each identity confidence modifier specifies a linear identity confidence transformation.

17. The computer-readable medium of claim 12, wherein:  
each identity confidence is associated with one of a set of issued network identifiers;  
each learned identity confidence modifier is associated with one of the set of issued network identifiers;  
each identity confidence has a value; and  
adjusting the set of learned identity confidence modifiers comprises, for each issued network identifier in the set of issued network identifiers, augmenting the learned identity confidence modifier associated with the issued network identifier if the value of the identity confidence associated with the issued network identifier in the first set of identity confidences is more than a matching tolerance less than the value of the identity confidence associated with the issued network identifier in the second set of identity confidences.

18. The computer-readable medium of claim 17, wherein adjusting the set of learned identity confidence modifiers further comprises, for each issued network identifier in the set of issued network identifiers, reducing the learned identity confidence modifier associated with the issued network identifier if the value of the identity confidence associated with the issued network identifier in the first set of identity confidences is more than a matching tolerance greater than the value of the identity confidence associated with the issued network identifier in the second set of identity confidences.

19. The computer-readable medium of claim 17, wherein augmenting the learned identity confidence modifier comprises transforming the learned identity confidence modifier so that applying the transformed learned identity confidence modifier to an identity confidence results in a higher identity confidence value than that resulting from applying the untransformed learned identity confidence modifier to the identity confidence.

20. The computer-readable medium of claim 17, wherein: each learned identity confidence modifier modifies a candidate identity confidence by adding a learned variable to the value of the candidate identity confidence; and augmenting the learned identity confidence modifier comprises adding an augmentation constant to the learned variable.

21. A computerized system, comprising a network fingerprinting component configured to, at least:

issue at least one network identifier for at least one computer network;  
maintain a set of issued network identifiers; and  
maintain a set of current identity confidences, the set of current identity confidences comprising an identity confidence for each issued network identifier with respect to at least one current computer network.

22. The computerized system of claim 21, wherein the network fingerprinting component is further configured to, at least:

maintain a set of issued network attributes, the set of issued network attributes comprising, for each issued network identifier in the set of issued network identifiers, at least one network attribute of a computer network identified by the issued network identifier; and

maintain a set of current network attributes, the set of current network attributes comprising at least one network attribute of each current computer network.

23. The computerized system of claim 22, wherein the network fingerprinting component is further configured to, at least:

maintain a set of identity confidence modifiers, the set of identity confidence modifiers comprising at least one identity confidence modifier for each network attribute in the set of current network attributes; and

apply at least one identity confidence modifier to at least one identity confidence.

24. The computerized system of claim 21, wherein:

each computer network has a plurality of network attributes, the plurality of network attributes comprising:  
at least one passive network attribute; and  
at least one active network attribute;  
each network attribute has a value;  
retrieving the value of each active network attribute comprises generating network traffic on the computer network that has the active network attribute; and  
the network fingerprinting component is further configured to, at least:  
maintain a set of issued passive network attributes, for each issued network identifier in the set of issued network identifiers, at least one passive network attribute of a computer network identified by the issued network identifier;  
maintain a set of issued active network attributes, for each issued network identifier in the set of issued network identifiers, at least one active network attribute of a computer network identified by the issued network identifier;  
maintain a set of current passive network attributes, for each current computer network; and  
maintain a set of current active network attributes, for each current computer network.

25. The computerized system of claim 24, wherein the network fingerprinting component is further configured to, at least:

maintain a set of passive network attribute identity confidence modifiers, the set of passive network attribute identity confidence modifiers comprising at least one passive network attribute identity confidence modifier for each passive network attribute in the set of current passive network attributes;

maintain a set of active network attribute identity confidence modifiers, the set of active network attribute identity confidence modifiers comprising at least one active network attribute identity confidence modifier for each active network attribute in the set of current active network attributes;

apply at least one passive network attribute identity confidence modifier to at least one identity confidence; and

apply at least one active network attribute identity confidence modifier to said at least one identity confidence.

26. The computerized system of claim 25, wherein the network fingerprinting component is further configured to, at least:

maintain a set of learned identity confidence modifiers, the set of learned identity confidence modifiers comprising at least one learned identity confidence modifier for each issued network identifier in the set of issued network identifiers; and

apply at least one learned identity confidence modifier to at least one identity confidence.

27. The computerized system of claim 26, wherein the network fingerprinting component is further configured to, at least, adjust the set of learned identity confidence modifiers so as to minimize differences between a first set of current identity confidences and a second set of current identity confidences, the first set of current identity confidences determined before retrieving active network attributes for said at least one current computer network, and the second set of current identity confidences determined after retrieving active network attributes for said at least one current computer network.

28. The computerized system of claim 25, wherein the network fingerprinting component is further configured to, at least:

for each issued network identifier in the set of issued network identifiers and for each passive network attribute in the set of current passive network attributes, apply at least one of said at least one passive network attribute identity confidence modifier for the passive network attribute to the identity confidence for the issued network identifier if the value of the passive network attribute in the set of current passive network attributes matches the value of the passive network attribute for the issued network identifier in the set of issued passive network attributes; and

for each issued network identifier in the set of issued network identifiers and for each active network attribute in the set of current active network attributes, apply at least one of said at least one active network attribute identity confidence modifier for the active network attribute to the identity confidence for the issued network identifier if the

value of the active network attribute in the set of current active network attributes matches the value of the active network attribute for the issued network identifier in the set of issued active network attributes.

29. The computerized system of claim 25, wherein:  
each identity confidence modifier specifies a transformation of an identity confidence; and  
applying the identity confidence modifier to the identity confidence comprises transforming the identity confidence in accordance with the transformation specified by the identity confidence modifier.

30. The computerized system of claim 29, wherein each identity confidence modifier specifies a linear transformation of the identity confidence.

31. The computerized system of claim 21, wherein each network identifier is a globally unique identifier (GUID).